

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
)	
2000 Biennial Regulatory Review --)	IB Docket No. 00-248
Streamlining and Other Revisions of Part 25 of)	
the Commission's Rules Governing the Licensing)	
of, and Spectrum Usage by, Satellite Network)	
Earth Stations and Space Stations)	
)	

REPLY COMMENTS OF ASTROLINK INTERNATIONAL LLC

ASTROLINK International LLC ("Astrolink"), by its attorneys, hereby submits its Reply Comments in the above-referenced proceeding.¹ In addition to filing these Reply Comments, Astrolink joins the Reply Comments of the Satellite Industry Association ("SIA").

I. INTRODUCTION

In its initial comments, Astrolink expressed support for the Commission's efforts to reduce the regulatory burdens associated with the provision of satellite services in the United States, and urged the Commission to ensure that changes to its earth station licensing rules promote the introduction of new satellite services without unduly burdening or otherwise undermining authorized satellite operations.² In addition, because there is no distinction between routine and non-routine earth stations for purposes of Ka-band earth station licensing, Astrolink

¹ See 2000 Biennial Regulatory Review – Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Use by, Satellite Network Earth Stations and Space Stations, *Notice of Proposed Rulemaking*, IB Docket No. 00-248 (rel. Dec. 14, 2000) ("*NPRM*").

² See Comments of ASTROLINK International LLC, IB Docket No. 00-248 (filed March 26, 2001) at 1-2 ("Astrolink Comments").

asked the Commission to clarify that the proposals concerning streamlined processing of non-routine earth station applications do not apply in the Ka-band.³ Further, Astrolink suggested that several of the licensing changes proposed for blanket-licensed mobile earth station terminals (“METs”) should be applied to blanket-licensed Ka-band user terminals.⁴ Astrolink did not support, however, the proposed 3 dB reduction in power for Ku-band VSAT networks employing random access techniques because the proposal is overly simplistic and is not tailored to address the complex issues associated with regulation of various multiple access schemes.⁵ Finally, Astrolink supported many of the miscellaneous changes proposed by the Commission to update its rules because they are necessary to reflect changes in policy and circumstances.⁶

In these Reply Comments, Astrolink further addresses issues associated with the Commission’s proposed regulation of random access schemes.

II. ASTROLINK OPPOSES THE REDUCTION OF POWER LIMITS FOR VSAT NETWORKS EMPLOYING RANDOM ACCESS TECHNIQUES

As discussed in its initial comments, Astrolink opposes the Commission’s proposed 3 dB power reduction for Ku-band VSAT networks using random access techniques and any extension of this proposal to the C-band or Ka-band. The other comments filed in this proceeding confirm that an across-the-board reduction in power is not necessary from a technical or operational perspective and would significantly undermine the commercial viability of VSAT networks and

³ See *id.* at 2-4.

⁴ For example, Astrolink supported the relaxation of the construction completion requirement for both METs and blanket-licensed Ka-band user terminals, but opposed the Commission’s proposals to limit renewal applications and to impose certain reporting and implementation requirements. See *id.* at 4-9.

⁵ See *id.* at 9-14.

⁶ See *id.* at 14-16.

other planned satellite services. In addition, the Commission's "one-size-fits-all" approach fails to account for the wide range of random access schemes that may be employed by various systems, and sacrifices the operational requirements of all satellite systems using multiple access techniques in favor of mere regulatory simplicity.

A. The Record of this Proceeding Confirms That the Proposed Reduction in Power is Unnecessary and Would Undermine the Commercial Viability of Ku-band VSAT Networks

The comments filed in this proceeding establish that the proposed 3 dB reduction in power for VSAT earth stations using random access techniques is not necessary from a technical perspective. No commenter has reported any interference problems associated with the use of Aloha random access techniques by Ku-band VSAT networks, and the satellite industry uniformly opposes the Commission's proposed power reduction for earth stations using such multiple access techniques.

Loral, for example, states that it "is not aware of *any* reported incidents of unacceptable interference attributable to the operation of these networks at the current 'blanket licensing' levels" and believes that the "proposal may be unnecessary."⁷ Similarly, GE Americom supports the use of random access techniques and reports that "such operations have not resulted in unacceptable interference."⁸ Hughes states that the "Commission's proposal would be a radical change to the existing rules and appears to be a solution to a problem that does not exist."⁹

⁷ See Comments of Loral Space & Communications Ltd., IB Docket No. 00-248 (filed March 26, 2001) at 12 (emphasis added); *id.* at 11.

⁸ See Comments of GE American Communications, Inc., IB Docket No. 00-248 (filed March 26, 2001) at 4.

⁹ See Joint Comments of Hughes Network Systems, Hughes Communications, Inc. and Hughes Communications Galaxy, Inc., IB Docket No. 00-248 (filed March 26, 2001) at 22 ("Hughes Comments").

Furthermore, an increase in the number of earth stations using random access techniques would not cause an increased potential for interference.¹⁰ Successful implementation of Aloha random access techniques by satellite systems requires that the probability of collision be minimized. Thus, as noted by Spacenet/Starband, “[n]etworks are designed to accommodate the expected maximum traffic, and incorporate some form of congestion control to prevent exceeding the design loading.”¹¹ As a result, “the Commission’s proposed regulatory intrusion is unnecessary; the industry’s need to assure a service that is competitive with wireline and other terrestrial services will preclude excessive collisions.”¹² Given the significant operational experience of VSAT operators with the use of random access schemes and the lack of any evidence that such techniques increase the potential for harmful interference, Astrolink urges the Commission to refrain from imposing undue regulations in this area.

In addition, an across-the-board 3 dB reduction in power for Ku-band earth stations would adversely affect the commercial viability of VSAT networks. According to Hughes, “VSAT networks do not have 3 dB, or in many cases even 1 dB, of *excess* link margin to be sacrificed for these purposes.”¹³ Astrolink agrees that a 3 dB reduction in power levels would render many satellite links unusable, or at a minimum, seriously affect a system’s achievable availability and capacity.¹⁴ Thus, the proposed reduction in power for Ku-band VSAT earth

¹⁰ See Hughes Comments at 21; *see also* Comments of Spacenet Inc. and StarBand Communications, Inc. (“Spacenet/Starband Comments”) at 37-38.

¹¹ See Spacenet/Starband Comments at 37.

¹² See *id.* at 38.

¹³ See Hughes Comments at 22 (emphasis in original).

¹⁴ See Astrolink Comments at 12.

stations using Aloha access techniques would place satellite-delivered communications services at a significant competitive disadvantage, thereby undermining their commercial viability.

In view of the foregoing, Astrolink urges the Commission to abandon its proposal to regulate the use of random access schemes by Ku-band VSAT earth stations. However, if the Commission ultimately concludes that it must regulate these multiple access techniques, Astrolink suggests that the Commission limit the average power radiated toward the target satellite by the VSAT network as proposed by Hughes in the Spacenet proceeding.¹⁵ Astrolink believes this approach would provide the additional assurance apparently being sought by the Commission that unacceptable interference is being prevented, without unduly burdening Ku-band VSAT networks.

B. The Commission Should Not Apply Random Access Rules Adopted for Ku-Band VSAT Networks to Ka-Band Systems

As noted in Astrolink's initial comments, there are significant differences in the Commission's approach to regulating Ku-band VSAT networks and Ka-band satellite systems.¹⁶ As a result, the Commission is not constrained to apply random access rules developed for Ku-band VSATs to Ka-band earth stations.¹⁷ Furthermore, the distinct operational environment and technical characteristics of Ka-band satellite services preclude the blind application of Ku-band

¹⁵ See Reply Comments of Hughes Network Systems, RM 9864 (filed June 14, 2000) (VSAT random access schemes should be permitted if: (i) each remote station satisfies the antenna power density limit of paragraph (a) of Section 25.134; (ii) the total average power radiated toward the target satellite by all of the remote stations in the network using an averaging period of one second is less than that of a single remote station transmitting continuously; and (iii) the maximum duration of any individual collision is less than 100 milliseconds).

¹⁶ For example, there is no distinction between routine and non-routine earth stations for purposes of Ka-band earth station licensing, and the Ka-band earth station licensing rules contemplate uplink transmissions in excess of the levels specified in the rules in certain circumstances. See Astrolink Comments at 2-4, 14 (citations omitted).

¹⁷ See *Spacenet Order* at App. A.

random access rules to Ka-band systems. Thus, Astrolink urges the Commission to limit the application of any random access rules adopted in this proceeding to Ku-band VSAT networks only.

To the extent the Commission concludes it should separately regulate the use of random access techniques by Ka-band systems, Astrolink believes that the Commission must consider the wide range of Aloha multiple access schemes that may be employed by such systems.¹⁸ In contrast to Ku-band VSAT networks that are the focus of this proceeding, which use Aloha access techniques for all data transmissions, other systems plan to use random access techniques for signaling information only (*e.g.*, to reserve a time slot for subsequent TDMA transmissions).¹⁹ Because signaling information constitutes a very small percentage of total uplink traffic in these systems, the probability of collision is far less than in systems employing Aloha access schemes for all communications traffic.²⁰ The unnecessarily restrictive 100% of the time 3 dB power reduction proposed in the *NPRM* would be particularly burdensome and completely unnecessary for such partial-Aloha access systems. Thus, Astrolink believes that the Commission must ensure that any random access rules considered for Ka-band accommodate systems employing limited Aloha access schemes.²¹

¹⁸ See Astrolink Comments at 12-14.

¹⁹ After an earth station has successfully reserved a TDMA time slot, it would cease transmitting Aloha signaling packets and transmit in standard TDMA mode only. During standard TDMA transmissions, there is no possibility of transmission collisions.

²⁰ See Astrolink Comments at 12-14.

²¹ For example, the Commission could apply random access regulations only to Ka-band earth stations that use Aloha access techniques for transmitting a significant portion of the overall data across the network.

In addition, rather than the across-the-board power reduction proposed in the *NPRM* for earth stations using random access techniques, Astrolink would only support a more tailored regulatory approach for Aloha access schemes that addresses the time-varying nature of potential interference. For example, Astrolink believes that it may be possible to limit the average power radiated toward the target satellite by Ka-band earth stations, similar to the proposal made by Hughes in the Spacenet proceeding for VSAT networks.²² Of course, additional technical work would be necessary to adapt any such proposal to govern random access techniques employed by blanket-licensed Ka-band user terminals. However, Astrolink would reiterate that it does not believe that such regulations are necessary for Ka-band systems.

III. CONCLUSION

For the foregoing reasons, Astrolink requests that the Commission take action in this proceeding consistent with these Reply Comments.

Respectfully submitted,

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May 7, 2001

²² See *supra* n. 15; see also Astrolink Comments at 13.

CERTIFICATE OF SERVICE

I, Vicki Lynne Lyttle, a legal secretary at Dow, Lohnes & Albertson, do hereby certify that on this 7th day of May, 2001, I caused copies of the foregoing "Reply Comments of The Satellite Industry Association" to be sent by first-class mail, postage prepaid, to the following:

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